(seg) model. More ischemic seg were noted with RE than RD (3.4 vs. 2.0; p < 0.001).

"Hard" events were noted in 8 pts (11%; 3 cardiac deaths, 5 MI); total cardiac events, including revascularization, occurred in 18 pts (25%). Unlike the findings with RE which did not identify pts with subsequent events, pts with late hard events had more ischemic segments than those without events (4.1 vs. 1.7; p < 0.01). Likewise, the summed reversibility score using RD was greater in pts with vs. without hard events (4.8 vs. 1.4; p < 0.01) and total events (3.2 vs. 1.4; p < 0.03). Logistic regression analysis revealed that the total number of ischemic segments on RD predicted both "hard" and total cardiac events, p < 0.01 and p < 0.03, respectively. The relative risk for hard (1.5 fold) and total (1.3 fold) cardiac events was increased when RD ischemia was noted. More severe defects on RD further increased the relative risk to 1.9 (95% C.I. = 1.2–2.8). In contrast, ischemia with RE failed to predict either hard or total cardiac events.

These results suggest that the addition of thallium reinjection not only fails to yield incremental prognostic information but may also detracts from the predictive value of thallium imaging in post-MI pts.

1004-30 Tc-99m Sestamibi (MIBI) Defect Magnitude During Dobutamine Stress Underestimates the Magnitude of Ischemia in Dogs With Mild Coronary Stenoses

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MIBI underestimates the magnitude of flow disparity in dogs with mild LAD stenoses during adenosine vasodilatation. In this study, we examined the effect of dobutamine (Dob) stress on MIBI uptake in the same model. In 7 open-chest dogs, a mild LAD stenosis was placed prior to Dob infusion (10 μg/kg/min × 5 min). At peak Dob, MIBI (8 mCi) and microspheres (mic) were co-injected and images were acquired at 5 and 45 min. Dob increased mean heart rate (140 to 178 BPM) and dP/dt (1908 to 4735 mmHg/sec) (p < 0.01). LCX systolic thickening increased from 19 to 27% (p < 0.05) without a change in thickening in the stenotic LAD region. Dob also increased epicardial and transmural (TM) mic flows in both the LCX (TM: ↑ 132%) and LAD (TM: ↑ 79%) regions, but the magnitudes of these flow increases were significantly greater in the LCX region (p < 0.01). Likewise, in the endocardium (Endo), Dob increased flow in both the LCX and LAD regions, but the LAD Endo flow increase was insignificant. Despite these regional flow differences, defect magnitudes were only 0.83 and 0.84 at 5 and 45 min respectively. Additionally, the TM MIBI activity ratio (LAD/LCX) by well counting underestimated the Dob flow ratio (0.93 vs 0.71; p < 0.01). Thus, dogs with mild LAD stenoses show depressed flow reserve and lack of hyperkinesis in the LAD region with Dob. In this model, MIBI images significantly underestimate the magnitude of this Dob-induced mild ischemia.

1004-31 Carvedilol Reduces Cardiac Events in Patients With Post-Infarction Myocardial Ischemia Detected by Tl-201 Imaging

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The effects of the vasodilating β-blocker Carvedilol (C) was studied in 101 patients (pts) who had undergone thrombolysis for acute myocardial infarction (AMI) and had remained stable for 6 weeks thereafter. Of an initial cohort of 147 pts randomised to either C or placebo (P), 101 had remained event free at time of imaging at 6 weeks post-AMI. Patients underwent stress and separate day rest Tl-201 imaging. Images were reported by 2 blinded observers and significant ischemia was defined when reversible Tl-201 defect was noted in at least 2 segments of an 18 segment model. Of 101 pts; 56 were on C and 45 on P; 70 showed significant reversibility. Patients remained on double-blind therapy for 6 months post-AMI or until one of the following events occurred — death, re-infarction, unstable angina, heart failure, or urgent revascularisation. There were 14 events in this group of pts. Results are shown below:

	Carvedilol (n = pts)	Events (%)	Placebo (n = pts)	Events (%)
Ischemia Present	39	4 (10%)	31	9 (29%)
Ischemia Absent	17	0 (0%)	14	1 (7%)

There was a trend towards increased events in the group with ischemia but this failed to reach significance. However, treatment with C significantly reduced events in its group (p = 0.04, odds ratio = 0.27) and when adjusted for the presence of ischemia this effect was more significant (p = 0.03, odds ratio = 0.25). Silent myocardial ischaemia is common after thrombolysis, even in "stable" pts, and C reduces adverse events in this group.

1004-32 Late Reduction in Sestamibi Defect Size in Patients With First Q-Wave Anterior Myocardial Infarction and Patent Coronary Arteries

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Determination of defect size by sestamibi SPECT imaging five days post myocardial infarction has been considered to represent the final infarct size. This study prospectively examined serial sestamibi scans in 25 patients (age 54.5 ± 11.1 y; 21 males) with first Q-wave myocardial infarction. Patients were treated with either thrombolysis (n = 5), primary PTCA/atherectomy/stents (n = 14), coronary artery bypass surgery (n = 2), or conventional therapy (n = 4). Coronary artery patency before the first sestamibi scan was documented in 23/25 pts. The initial sestamibi scan was performed at a median of 8 days post myocardial infarction (range 5–40 days, mean 10.5 days) with a median defect size of 36% of LV (range 0–76%). The second sestamibi scan post myocardial infarction (6 wks–6 mos) indicated a significant (p = 0.033) decrease in defect size to a median of 22% of LV (range 0–66%). Fourteen patients (56%) had a decrease of > 6%, the 95% confidence limit of reproducibility. No patient had a recurrent MI between scans. There was a weak correlation (r = 0.4; p = 0.07) between the decrease in defect size and the number of diseased vessels with stenoses > 70% luminal diameter. No correlation was found between the time to the first sestamibi scan and the change in defect size between the scans.

Conclusion: 1) Patients with first Q-wave anterior MI receiving reperfusion therapy may have a significant reduction in sestamibi SPECT defect size between early (5–40 days) and late imaging (6 wks–6 mos). 2) Further studies will be needed to determine whether measurement of the defect size early or late post myocardial infarction has the most clinical relevance.

1005 Exercise Testing: New Developments

Wednesday, March 27, 1996, 9:00 a.m.–11:00 a.m.
Orange County Convention Center, Hall E
Presentation Hour: 10:00 a.m.–11:00 a.m.

1005-33 Are There Gender Differences in the Safety and Ischemic Profile of Dobutamine Stress Echocardiography?

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Dobutamine stress echocardiography (DSE) is known to be useful in the detection of myocardial ischemia. To determine whether there are gender-specific differences, we retrospectively studied 416 women and 316 men who received IV dobutamine, with ECG and two-dimensional echocardiography (2DE) recorded at each stage. There were modest gender differences in age, heart rate (HR) and systolic blood pressure (SBP) at rest (mean ± S.D. = 61 ± 11 y.o., 73 ± 14/min and 135 ± 20 mmHg in men and 63 ± 12 y.o., 78 ± 13/min, 141 ± 21 mmHg in women, respectively, all p < 0.05), but not in beta-blocker usage (25–26%). There was a modest gender difference in peak HR (137 ± 17/min in men vs. 139 ± 15/min in women, p < 0.05), but not in peak SBP (148 ± 28 vs. 149 ± 27 mmHg). Although less dobutamine was needed to reach an end-point in women (mean: 33 ± 8 vs. 30 ± 8 mcg/kg/min, p < 0.0001), prevalence of positive results (stress-induced ECG or 2DE abnormalities) was higher in men (31% vs. 20%, p = 0.002). Incidence of stress-induced hypotension (15% in men vs. 18% in women), ventricular arrhythmias (33% vs. 29%) and chest pain (23% vs. 22%) was similar. Stress-induced LV wall motion abnormalities (WMA), reportedly a reliable marker for ischemia, were less frequent in women (13% vs. 24%, p = 0.002). However, combined chest pain and ST-T wave changes were moderately and equally sensitive (66% vs. 62%), and specific (74% vs. 75%) for detecting stress-induced WMA in women and men (p = NS). ST-T wave changes alone were more sensitive in women (44% vs. 66%, p < 0.05), but highly specific in both men and women (90% vs. 93%, p = NS) for detecting WMA. *Conclusion:* DSE had a similar safety profile in men and women, but was more likely to be negative for detecting ischemia in women in our study, possibly due to differences in coronary artery disease prevalence. There was no gender difference in the moderate sensitivity and specificity of combined chest pain and ECG changes for detecting ischemic WMA.